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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/970,749 | 10/03/2001 | Charles A. Miller | FORM 2209 (P139-US) | 1647 |

7812 7590 04/25/2002
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| EXAMINER | |
| DINH, TUAN T | |
| ART UNIT | PAPER NUMBER |

2827

DATE MAILED: 04/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|--------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/970,749 | MILLER, CHARLES A. |
| | Examiner | Art Unit |
| | Tuan T Dinh | 2827 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 12 April 2002.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 and 32-38 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 21-31 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election with traverse of Group III (claims 21-38) and Embodiment I (figures 4-10, 14-17) in Paper No. 3 is NOT acknowledged. The traversal is on the ground(s) that the searches for the groups I and II-III would be co-extensive. This is not found persuasive because the method claims (1-20) would be classified in a different class than claims 21-38. Also, claims 32-38 read on another Embodiment, i.e. Embodiment IV, and does not select by applicant; therefore, Embodiment I (Fig. 4-10 and 14-17 are not appropriate to exam claims 32-38.

The requirement is still deemed proper and is therefore made FINAL. Claims 1-20 and 32-38 are withdrawn from further consideration as being drawn to non-elected subject matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 21-24 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayashi et al. (U. S. Patent 5,569,952).

As to claim 21, Hayashi discloses a multiple die electronic system (28-figure 8) as shown in figures 1-16 comprising:

a substrate (5-figure 3, column 5, line 29) having conductors (not shown, column 5, line 30) formed thereon,

a base (2, column 4, line 43) IC die having a first surface facing the substrate and a second surface parallel to the first surface (see figure 3),

a first secondary IC die (3, column 4, line 46) residing between the first surface of the base IC and the substrate and linked to the first surface of the base IC die through first conductive signal paths (2a, column 4, line 49), and

conductive contacts (4, column 4, line 49) extending between the first surface of the base IC die and the conductors on the substrate for conveying signals between the base IC die and the conductors on the substrate.

As to claim 22, Hayashi discloses a multiple die electronic system as shown in figures 1-16 wherein solder (column 4, line 49) forms the first conductive signal paths.

As to claims 23-24, Hayashi discloses a multiple die electronic system as shown in figure 3 wherein the substrate (5) is a printed circuit board substrate or a semiconductor substrate.

As to claim 29, Hayashi discloses a multiple die electronic system as shown in figures 1-16 further comprising:

a second secondary IC die (3-figure 3); and
second conductive paths linking the second secondary IC die to the second surface of the base IC die.

As to claim 30, Hayashi discloses a multiple die electronic system as shown in figures 1-16 further comprising conductive vias for providing signal paths between the first and second surfaces of the base IC die.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (U. S. Patent 5,969,952) in view of Khandros et al. (U. S. Patent 6,330,164).

As to claims 25-28, and 31, Hayashi discloses a multiple die electronic system as shown in figures 1-16 wherein the conductive contacts (4) are formed on the first surface of the base IC die (2) and soldered to the conductors on the substrate (5-figure 3). Hayashi does not teach the conductive contacts are resilient spring contacts.

Khandros shows conductive resilient spring contacts (21-figure 2) connected between IC base (12) and a substrate (10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use resilient spring contacts as taught by Khandros to employ the multiple die electronic system in order to provide a high volume, low cost manufacturing process, and geometry protuberant conductive contacts..

As to claim 31, Hayashi discloses a multiple die electronic system as shown in figures 1-5 wherein the second conductive paths comprise spring contacts.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
April 22, 2002

*K. Kline
Kline
Primary Examiner*